Table 6. Thermodynamic Properties of Moist Air[a], 29.921 In. Hg

Temp Deg F	Saturation Humidity Ratio W_s Weight of Water per Lb of Dry Air		Volume Cu Ft per Lb Dry Air			Enthalpy Btu per Lb Dry Air			Specific Enthalpy of Solid Water Btu per Lb h_w	Saturation Pressure $p_s \times 10^3$		Temp Deg F
	Pounds $\times 10^3$	Grains	Dry Air v_a	v_{as} $(v_s - v_a)$	Saturated Mixture v_s	Dry Air h_a	h_{as} $(h_s - h_a)$	Saturated Mixture h_s		In. of Hg	Lb per Sq In.	
−60	2.108	0.14756	10.07	0.00	10.07	−14.48	0.02	−14.46	−185.4	101.4	49.808	−60
−59	2.262	.15834	10.09	.00	10.09	−14.23	.02	−14.21	−185.0	108.8	53.443	−59
−58	2.418	.16926	10.12	.00	10.12	−13.99	.02	−13.97	−184.6	116.3	57.127	−58
−57	2.595	.18165	10.14	.00	10.14	−13.75	.03	−13.72	−184.2	124.8	61.302	−57
−56	2.773	.19411	10.17	.00	10.17	−13.50	.03	−13.47	−183.8	133.4	65.526	−56
−55	2.973	0.20811	10.19	0.00	10.19	−13.26	0.03	−13.23	−183.4	143.0	70.242	−55
−54	3.181	.22267	10.22	.00	10.22	−13.02	.03	−12.99	−182.9	153.0	75.154	−54
−53	3.399	.23793	10.24	.00	10.24	−12.78	.04	−12.74	−182.5	163.5	80.311	−53
−52	3.636	.25452	10.27	.00	10.27	−12.53	.04	−12.49	−182.1	174.9	85.911	−52
−51	3.888	.27216	10.29	.00	10.29	−12.29	.04	−12.25	−181.7	187.0	91.854	−51
−50	4.156	0.29092	10.32	0.00	10.32	−12.05	0.04	−12.01	−181.3	199.9	98.191	−50
−49	4.428	.30996	10.34	.00	10.34	−11.81	.05	−11.76	−180.9	213.0	104.63	−49
−48	4.738	.33166	10.37	.00	10.37	−11.57	.05	−11.52	−180.4	227.9	111.94	−48
−47	5.054	.35378	10.40	.00	10.40	−11.32	.05	−11.27	−180.0	243.1	119.41	−47
−46	5.395	.37765	10.42	.00	10.42	−11.08	.06	−11.02	−179.6	259.5	127.47	−46
−45	5.753	0.40271	10.45	0.00	10.45	−10.84	0.06	−10.78	−179.2	276.7	135.92	−45
−44	6.133	.42931	10.47	.00	10.47	−10.60	.06	−10.54	−178.7	295.0	144.90	−44
−43	6.543	.45801	10.50	.00	10.50	−10.35	.07	−10.28	−178.3	314.7	154.58	−43
−42	6.971	.48797	10.52	.00	10.52	−10.11	.07	−10.04	−177.9	335.3	164.70	−42
−41	7.435	.52045	10.55	.00	10.55	−9.872	.077	−9.795	−177.4	357.6	175.65	−41
−40	7.907	0.55349	10.57	0.00	10.57	−9.629	0.082	−9.547	−177.0	380.3	186.80	−40
−39	8.431	.59017	10.60	.00	10.60	−9.388	.088	−9.300	−176.6	405.5	199.18	−39
−38	8.965	.62755	10.62	.00	10.62	−9.146	.093	−9.053	−176.1	431.2	211.81	−38
−37	9.548	.66836	10.65	.00	10.65	−8.905	.100	−8.805	−175.7	459.2	225.56	−37
−36	10.16	.71120	10.67	.00	10.67	−8.663	.106	−8.557	−174.8	488.4	239.90	−36
−35	10.80	0.75600	10.69	0.00	10.69	−8.422	0.113	−8.309	−174.4	519.5	255.18	−35
−34	11.49	.80430	10.72	.00	10.72	−8.180	.120	−8.060	−174.0	552.4	271.34	−34
−33	12.20	.85400	10.75	.00	10.75	−7.939	.127	−7.812	−173.5	586.5	288.09	−33
−32	12.97	.90790	10.77	.00	10.77	−7.698	.136	−7.562	−173.1	623.7	306.36	−32
−31	13.76	.96320	10.80	.00	10.80	−7.457	.144	−7.313	−172.6	661.8	325.08	−31
−30	14.58	1.0206	10.82	0.00	10.82	−7.216	0.152	−7.064	−172.2	701.0	344.33	−30
−29	15.43	1.0801	10.85	.00	10.85	−6.975	.161	−6.814	−171.7	742.2	364.57	−29
−28	16.45	1.1515	10.87	.00	10.87	−6.734	.172	−6.562	−171.3	791.2	388.64	−28
−27	17.49	1.2243	10.90	.00	10.90	−6.493	.183	−6.310	−170.9	841.0	413.10	−27
−26	18.55	1.2985	10.92	.00	10.92	−6.251	.194	−6.057	−170.4	892.1	438.20	−26

[a]Compiled by W. M. Sawdon and extended by John A. Goff.

Table 6. Thermodynamic Properties of Moist Air[a], 29.921 In. Hg (Continued)

Temp Deg F	Saturation Humidity Ratio W_s Weight of Water per Lb of Dry Air		Volume Cu Ft per Lb Dry Air			Enthalpy Btu per Lb Dry Air			Specific Enthalpy of Solid Water Btu per Lb h_w	Saturation Pressure $p_s \times 10^3$		Temp Deg F
	Pounds $\times 10^3$	Grains	Dry Air v_a	v_{as} $(v_s - v_a)$	Saturated Mixture v_s	Dry Air h_a	h_{as} $(h_s - h_a)$	Saturated Mixture h_s		In. of Hg	Lb per Sq In.	
−25	19.68	1.3776	10.95	0.00	10.95	−6.011	0.206	−5.805	−170.4	946.4	464.87	−25
−24	20.86	1.4602	10.97	.00	10.97	−5.770	.219	−5.551	−170.0	1003.	492.67	−24
−23	22.13	1.5491	11.00	.00	11.00	−5.529	.232	−5.297	−169.5	1064.	522.64	−23
−22	23.42	1.6394	11.02	.00	11.02	−5.288	.246	−5.042	−169.0	1126.	553.09	−22
−21	24.79	1.7353	11.05	.00	11.05	−5.047	.260	−4.787	−168.6	1192.	585.51	−21
−20	26.25	1.8375	11.07	0.00	11.07	−4.807	0.276	−4.531	−168.2	1262.0	619.89	−20
−19	27.81	1.9467	11.10	.00	11.10	−4.566	.292	−4.274	−167.7	1337.	656.73	−19
−18	29.45	2.0615	11.13	.00	11.13	−4.325	.310	−4.015	−167.2	1416.	695.54	−18
−17	31.12	2.1784	11.15	.00	11.15	−4.085	.327	−3.758	−166.8	1496.	734.84	−17
−16	32.95	2.3065	11.18	.00	11.18	−3.844	.347	−3.497	−166.3	1584.	778.06	−16
−15	34.84	2.4388	11.20	0.01	11.21	−3.604	0.367	−3.237	−165.9	1675.0	822.76	−15
−14	36.86	2.5802	11.23	.01	11.24	−3.363	.388	−2.975	−165.4	1772.	870.41	−14
−13	38.98	2.7286	11.25	.01	11.26	−3.123	.411	−2.712	−165.0	1874.	920.51	−13
−12	41.19	2.8833	11.28	.01	11.29	−2.883	.434	−2.449	−164.5	1980.	972.58	−12
−11	43.54	3.0478	11.30	.01	11.31	−2.642	.459	−2.183	−164.0	2093.	1028.1	−11
−10	45.98	3.2186	11.33	0.01	11.34	−2.402	0.485	−1.917	−163.6	2210.0	1085.6	−10
−9	48.58	3.4006	11.35	.01	11.36	−2.162	.513	−1.649	−163.1	2335.	1147.0	−9
−8	51.25	3.5875	11.38	.01	11.39	−1.921	.541	−1.380	−162.7	2463.	1209.8	−8
−7	52.06	3.6442	11.40	.01	11.41	−1.681	.570	−1.111	−162.2	2502.	1229.0	−7
−6	57.12	3.9984	11.43	.01	11.44	−1.441	.603	−0.838	−161.7	2745.	1348.3	−6
−5	60.30	4.2210	11.45	0.01	11.46	−1.201	0.637	−0.564	−161.3	2898.0	1423.5	−5
−4	63.57	4.4499	11.48	.01	11.49	−0.960	.672	−0.288	−160.8	3055.	1500.6	−4
−3	67.05	4.6935	11.50	.01	11.51	−0.720	.709	−0.011	−160.3	3222.	1582.6	−3
−2	70.69	4.9483	11.53	.01	11.54	−0.480	.748	+0.268	−159.9	3397.	1668.6	−2
−1	74.50	5.2150	11.55	.01	11.57	−0.240	.789	+0.549	−159.4	3580.	1758.5	−1
0	78.52	5.5000	11.58	0.01	11.59	0	0.832	+0.832	−158.9	3773.0	1853.3	0

[a]Compiled by W. M. Sawdon and extended by John A. Goff.